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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,423

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01/05/2007

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EXAMINER

LE, THU NGUYET T

ART UNIT

PAPER NUMBER

2169

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/815,423	<b>Applicant(s)</b> IMAMURA ET AL.	
	<b>Examiner</b> Thu-Nguyet Le	<b>Art Unit</b> 2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 1-4 and 14-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>April 1, 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is responsive to communications through the applicant's application filed on April 1, 2004.

#### ***Information Disclosure Statement***

2. IDS submitted April 1, 2004 has been considered by examiner. A signed and initialed copy is attached hereto.

#### ***Claim Objections***

3. Claims 1-4, 14-17 are objected to because of the following informalities:

Claim 1 recites " The Xpath is partially established woth respect to a given XML event". Examiner believes it is a typing typo and suggests the "***woth***" should be changed to "***with***" or appropriate correction.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation "a computer to effect the functions of claim 5 " in line 6. There is insufficient antecedent basis for this limitation in the claim. For purpose

of examination, the examiner presumes the phrase should read, "a computer to effect the Xpath evaluating apparatus of claim 5".

Claim 19 recites the limitation "a computer to effect the functions of claim 8 " in line 6. There is insufficient antecedent basis for this limitation in the claim. For purpose of examination, the examiner presumes the phrase should read, "a computer to effect the Xpath evaluating apparatus of claim 8".

Claim 20 recites the limitation "a computer to effect the functions of claim 10 " in line 6. There is insufficient antecedent basis for this limitation in the claim. For purpose of examination, the examiner presumes the phrase should read, "a computer to effect the information processing apparatus of claim 10".

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 5-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims 5-13 recite the limitations of an apparatus. However, the claims lack necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material per se.

The claim 14 recites the limitation of "a program for controlling a computer to evaluate the Xpath". The program is software per se. The software claims cannot be patented.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Peng et al. (Xpath Queries on Streaming Data, International Conference on Management of Data, Proceedings of the 2003 ACM SIGMOD international conference on Management of data, published on June 9-12, 2003).

***With respect to claim 1***, Peng discloses an extensible-markup-language Path Language (XPath) evaluating method for evaluating the XPath relevant to an extensible-markup-language (XML) document by use of a computer, the XPath evaluating method comprising:

a first step of serially inputting XML event strings constituting an XML document to be processed (page 433, 2<sup>nd</sup> paragraph of [2.1], 1<sup>st</sup> paragraph of [3.1], "accepts XML streams" which is "sequence of SAX events");

a second step of serially evaluating the XPath respectively relevant to the inputted XML events (page 433, 1<sup>st</sup> of [3.]) and retaining information concerning a result

of partial evaluation of the XPath in given storing means when the XPath is partially established with respect to a given XML event (example 1 and last paragraph of page 432, when author element in input stream is encountered, Xpath is evaluated, and it satisfied the path /pub/book/author. However, book element, author elements are buffered to wait for later input stream events process); and

a third step of repeating the partial evaluation of the XPath along with the input of the XML event strings while considering the result of the partial evaluation retained in the storing means and evaluating that the XPath is established with respect to the XML document when the last part of the XPath is established (example 1 and last paragraph of page 432, along with the input stream of events like price, author,...end of second book, evaluating the Xpath "/pub[year=2000]/book[price<11]/author" is established).

**Claim 2** is rejected for the reasons set forth hereinabove for claim 1 and furthermore Peng teaches the Xpath evaluating method wherein the second step includes the steps of:

generating an automaton for expressing the XPath to be evaluated (page 432, 6<sup>th</sup> paragraph of column 1, "generate the hierarchical pushdown automaton corresponding to an XPath query"); and

evaluating the XPath partially by allowing transition of a state of the automaton based on inputted respective XML events and retaining a result of the partial evaluation as the state of the automaton (page 433, 1<sup>st</sup> paragraph of [3.]).

**Claim 3** is rejected for the reasons set forth hereinabove for claim 1 and furthermore Peng discloses the Xpath evaluating method wherein the second step includes the steps of:

generating a first stack which expresses the XPath to be evaluated with a string of stack elements (page 433, 1<sup>st</sup> paragraph of [3.], "a set of stack symbols"); and

generating a second stack for analyzing a nested structure of the XML document ("a set of input symbols") to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], lines 5-10).

**Claim 4** is rejected for the reasons set forth hereinabove for claim 1 and furthermore Peng teaches the Xpath evaluating method wherein the second step includes the steps of:

serially constructing a document tree indicating a document structure of the XML document to be processed based on input of respective XML events (page 436, 1<sup>st</sup> paragraph of [4.], "hierarchical pushdown transducer (HPDT), in form of a binary tree"; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an Xpath query); and

evaluating the XPath along with construction of the document tree by use of the document tree including a part which has been constructed (figures 5-11, and example 5, page 436, 1<sup>st</sup> of [4.2]).

**With respect to claim 5**, Peng discloses an XPath evaluating apparatus comprising:

an evaluation executing unit for inputting XML event strings constituting an XML document and serially evaluating the XPath with respect to each of XML events, while retaining information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and evaluating that the XPath is established with respect to the XML document when the last step of the XPath is established (page 433, 1<sup>st</sup> of [3], "Basic Pushdown Transducer"); and

an XML event transferring unit for inputting the XML event strings constituting the XML document to be processed and serially transferring the XML event strings to the evaluation executing unit (page 433, [2.1], "SAX parser").

**Claim 6** is rejected for the reasons set forth hereinabove for claim 5 and furthermore Peng teaches the XPath evaluating apparatus, further comprising:

an automaton generating unit for generating an automaton which expresses the XPath to be evaluated (page 433, 1<sup>st</sup> of [3.], "pushdown transducer"),

wherein the evaluation executing unit performs partial evaluation of the XPath by allowing a state of the automaton generated by the automaton generating unit to perform transition based on the XML events transferred from the XML event transferring unit, and retains a result of the partial evaluation as the state of the automaton (page 433, 1<sup>st</sup> paragraph of [3.]).

**Claim 7** is rejected for the reasons set forth hereinabove for claim 5 and furthermore Peng teaches the XPath evaluating apparatus, further comprising:



a stack generating unit for generating a first stack which expresses the XPath to be evaluated with a string of stack elements (page 433, 1<sup>st</sup> paragraph of [3.], “a set of stack symbols”),

wherein the evaluation executing unit performs partial evaluation of the XPath by generating a second stack for analyzing a nested structure of the XML document subject to processing based on the XML events transferred from the XML event transferring unit and then comparing the first stack generated by the stack generating unit with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], [3.1]).

***With respect to claim 8***, Peng teaches an XPath evaluating apparatus comprising:

a document tree constructing unit for inputting XML event strings which constitute an XML document and serially constructing a document tree indicating a document structure of the XML document based on inputted XML events along with the input of the respective XML events (page 434, [3.2], “building the BPDT” with figure 5-9);

an XML event transferring unit for inputting the XML event strings which constitute the XML document to be processed and serially transferring the XML event strings to the document tree constructing unit (page 433, [2.1], “SAX parser”); and

an evaluation executing unit for evaluating the XPath along with construction of the document tree by the document tree constructing unit, using the document tree with a part which has been constructed (page 436, 1<sup>st</sup> paragraph of [4.], “hierarchical pushdown transducer (HPDT), in form of a binary tree”; figure 11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an Xpath query).

**Claim 9** is rejected for the reasons set forth hereinabove for claim 8 and furthermore Peng teaches the XPath evaluating apparatus, wherein the evaluation executing unit retains information concerning a result of partial evaluation of the XPath when the XPath is partially established upon the evaluation of the XPath using the document tree (page 434, [3.3], "Buffer operation in BPDT").

**With respect to claim 10**, Peng teaches an information processing apparatus comprising:

an XML parser for analyzing an XML document to be processed and thereby generating XML event strings (page 433, [2.1]);

an XPath evaluating unit for serially inputting the XML event strings generated by the XML parser and evaluating the XPath with respect to each of inputted XML events by streaming processing (page 433, 1<sup>st</sup> of [3.], "PDA"); and

an application executing unit for inputting the XML events generated by the XML parser and performing processing with respect to the XML document configured by the XML events in response to an evaluation result of the XPath by the XPath evaluating unit (page 434, [3.2], "building the BPDT"),

wherein the XPath evaluating unit serially evaluates the XPath with respect to each of the XML events, retains information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and judges that the XPath is established with respect to the XML document when the last step of the XPath is established.

**Claim 11** is rejected for the reasons set forth hereinabove for claim 10 and furthermore Peng teaches the information processing apparatus, wherein the XPath evaluating unit generates an automaton for expressing the XPath to be evaluated, performs partial evaluation of the XPath by allowing transition of a state of the automaton based on the XML events generated by the XML parser, and retains a result of the partial evaluation as the state of the automaton (example 1 and last paragraph of page 432, when author element in input stream is encountered, Xpath is evaluated, and it satisfied the path /pub/book/author. However, book element, author elements are buffered to wait for later input stream events process).

**Claim 12** is rejected for the reasons set forth hereinabove for claim 10 and furthermore Peng teaches the information processing apparatus, wherein the XPath evaluating unit generates a first stack which expresses the XPath to be evaluated with a string of stack elements, generates a second stack for analyzing a nested structure of the XML document to be processed based on the XML events generated by the XML parser, and performs partial evaluation of the XPath by then comparing the first stack with the second stack (page 433, 1<sup>st</sup> paragraph of [3.], lines 5-10).

**Claim 13** is rejected for the reasons set forth hereinabove for claim 10 and furthermore Peng teaches the information processing apparatus, wherein the XPath evaluating unit serially constructs a document tree indicating a document structure of the XML document to be processed based on inputted XML events along with the input of the respective XML events generated by the XML parser, and evaluates the XPath by use of the document tree with a part which has been constructed (page 436, 1<sup>st</sup>

paragraph of [4.], "hierarchical pushdown transducer (HPDT), in form of a binary tree"; figure11, and 1<sup>st</sup> paragraph of [4.2], build an HPDT from an Xpath query).

**Claim 14** is rejected on grounds corresponding to the reasons given above for claim 1. The claim 1 claims limitations of the XPath evaluating method while the claim 14 claims limitations of a program causing the computer to execute the procedure for carrying out the steps of claim 1.

**Claim 15** is rejected on grounds corresponding to the reasons given above for claim 1. The claim 1 claims limitations of the XPath evaluating method while the claim 15 claims limitations of an article of manufacture comprising computer readable program code means for causing a computer to effect the steps of claim 1.

**Claim 16, and 17** are rejected on grounds corresponding to the reasons given above for claim 1. The claim 1 claims limitations of the XPath evaluating method while the claims 16, 17 claim limitations of a program storage device readable by machine to perform the steps of claim 1.

**Claim 18** are rejected on grounds corresponding to the reasons given above for claim 5. The claim 5 claims limitations of the XPath evaluating apparatus while the claim 18 claims limitations of a computer program product for causing a computer to effect the Xpath evaluating apparatus of claim 5.

**Claim 19** are rejected on grounds corresponding to the reasons given above for claim 8. The claim 8 claims limitations of the XPath evaluating apparatus while the claim 19 claims limitations of a computer program product for causing a computer to effect the Xpath evaluating apparatus of claim 8.

**Claim 20** are rejected on grounds corresponding to the reasons given above for claim 10. The claim 10 claims limitations of the information processing apparatus while the claim 20 claims limitations of a computer program product for causing a computer to effect the information processing apparatus of claim 10.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Nguyet Le whose telephone number is 571-270-1093. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TL

Thu-Nguyet Le  
December 18, 2006

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